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Cancel claims 1-31

--32. A method of manufacturing a winding of a stator for a rotating electric machine for high voltage, comprising steps of:

receiving the winding in slots of the stator and forming with the winding radial layers at different radial distances from an air gap between the stator and a rotor, including

forming a coil with a part of the winding that runs back and forth once through the stator between different layers, said coil having an arc-shaped coil end projecting from each end surface of the stator,

forming a coil overhang for each of the windings at each of the coil ends, and

placing joints between coils in the winding outside the respective coil overhangs.

33. A method according to claim 32, wherein:

said receiving step includes receiving an insulated electric conductor as a material that forms the winding; and

said forming a coil overhang step includes drawing out ends of the insulated electric conductor outside of the coil overhang to where the joints are placed in said placing step.

34. A method according to claim 33, further comprising:

drawing out an end of the insulated electric conductor a predetermined distance beyond the coil overhang and forming with the end an output terminal for providing a lower voltage than said high voltage

35. A method according to claim 34, further comprising a step of:

connecting the output terminal to another apparatus.

36. A method according to any of claims 32, wherein:

said forming a coil step includes threading the insulated electric conductor axially back and forth repeatedly in the slots of the stator.

37. A method according to claim 32, further comprising:

enclosing a generated electric field within the winding in at least one winding turn.

38. A method according to claim 32, wherein:

said receiving step includes receiving an insulated electric conductor as the winding, said insulated electric conductor comprising

a current-carrying conductor,

a first layer with semiconducting properties arranged around the current-carrying conductor,

a solid insulating layer arranged around said first layer, and

a second layer with semiconducting properties arranged around the insulating layer.

39. A method according to claim 38, wherein:

said forming a coil step includes flexing the insulated electric conductor to form the coil while having said first layer remain adhered to the solid insulating layer, and said solid insulating layer remaining adhered to said second layer.

40. A method according to claim 38, wherein:

said forming a coil step includes forming the coil with a high-voltage cable that embodies the insulated electric conductor.

41. A method according to claim 38, wherein:

said forming a coil step includes forming the coil the insulated electric conductor having the first layer, solid insulating layer and second layer made with materials exhibiting an elasticity and coefficients of thermal expansion such that volume changes of the layers, caused by temperature variations during operation, are absorbed by the elasticity of the materials such that the layers retain an adhesion to one another when exposed to temperature variations which arise during operation.

42. A method according to claim 41, wherein the materials in the first layer, solid insulating layer, and second layer have a high elasticity with an E-modulus less than 500 MPa.

43. A method according to claim 41, wherein the coefficients of thermal expansion of the materials in said first layer, said solid insulating layer, and said second layer being substantially equal to one another.

44. A method according to claim 41, wherein an adhesion between pairs of the first layer and the solid insulating layer, and the solid insulating layer and the second layer being of at least a same order of magnitude as in a weakest of the materials.

45. A method according to any of claims 38, wherein the second layer is configured to constitute a substantially equipotential surface while the current carrying conductor carries a high voltage.

46. A method according to claim 45, further comprising a step of:

connecting the second semi-conducting layer to ground potential.

47. A method according to claim 38, further comprising a step of:

holding respective surfaces of each of the first layer and the second layer at different equipotentials.

48. A method according to claim 32, wherein:

said forming a coil step is performed during a final mounting of the winding in the stator.

49. A method according to claim 32, further comprising a step of:

supplying a lubricant while drawing said winding through said slots in said stator in said receiving step.

50. A method according to claim 49, further comprising a step of:

drawing a bracing hose through the stator slots after the winding has been drawn through the stator slots in said receiving step.

51. A method according to claim 49, wherein said supplying the lubricant step includes supplying a dry lubricant.

52. A method according to claim 32, further comprising a step of:

attaching the winding to the stator slots with resilient elements.

53. A method according to any of claim 38, wherein:

an insulation system of the winding comprising

the first layer, the insulating layer, the second layer each formed by extrusion.

54. A method according to claim 38, said insulating layer having a high coefficient of linear expansion.

55. A method according to claim 38, wherein the current-carrying conductor includes mutually insulated strands.

56. A method according to any of claims 38, wherein the current-carrying conductor has a continuous, uncontrolled transposition.

57. A method according to claim 38, wherein the current-carrying conductor has a circular cross section.

58. A method according to claim 38, wherein the current-carrying conductor is configured to carry a current of less than 1000 A.

59. A method according to claim 32, wherein the winding includes a continuous corona protection device.

60. A method according to claim 59, further comprising a step of grounding the corona protection device.

61. A stator for a high-voltage rotating electric machine comprising:

a stator core having slots and a central void region;

a rotor that is positioned in the central void region;

a winding drawn through said slots in the stator core, wherein

the winding in positioned in radial layers at different radial distances from an air gap between the stator and a rotor,

a part of the winding that runs back and forth once through the stator between different layers arranged as separate coils, each of said coils having an arc-shaped coil end projecting from each end surface of the stator, each coil having a coil overhang at each end of the coil, and joints between respective of the coils being positioned outside respective coil overhangs.

62. A rotating electric machine for high voltage, comprising:

a stator core having slots and a central void region;

a rotor that is positioned in the central void region;

a winding drawn through said slots in the stator core, wherein

the winding in positioned in radial layers at different radial distances from an air gap between the stator and a rotor,

a part of the winding that runs back and forth once through the stator between different layers arranged as separate coils, each of said coils having an arc-shaped coil end projecting from each end surface of the stator, each coil having a coil overhang at each end of the coil, and joints between respective of the coils being positioned outside respective coil overhangs.

63. A stator for a high-voltage rotating electric machine, comprising:

a stator core having slots and a central void region;

a rotor that is positioned in the central void region;

a winding drawn through said slots in the stator core;

means for receiving the winding in said slots of the stator and means for forming a coil with portions of the winding arranged in radial layers at different radial distances from an air gap between the stator core and the rotor, said means for forming a coil including

means for forming the coil having an arc-shaped coil end projecting from each end surface of the stator,

means for forming a coil overhang for each of the windings at each of the coil ends, and

means for placing joints between coils in the winding outside the respective coil overhangs.--